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Mark Peting

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7590

06/28/2005

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EXAMINER

AHN, SAM K

ART UNIT

PAPER NUMBER

2637

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/955,529

Applicant(s)

PETING, MARK

Examiner

Sam K. Ahn

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2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8114,6043,10163.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because *the output of 450 in Fig.4 is not further illustrated in Fig.5a, while it is shown in Fig.5b*. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

3. Claims 1-40 are objected to because of the following informalities:

In claim 1, lines 3 and 5, respectively, delete "system-level" and insert "a system-level".

In claim 1, line 4, delete "each multimedia" and insert "each of said multimedia".

In claim 1, line 5, delete "said multimedia" and insert "said first group of multimedia".

In claim 2, lines 2 and 4, delete "signal-level" and insert "a signal-level".

In claim 2, line 4, delete "for each" and insert "for said each".

In claim 4, line 4, delete "system-level" and insert "said system-level".

In claim 5, line 2, delete " ("LNB") " and insert " (LNB) ".

In claim 7, line 3, delete " ("PLL") " and insert " (PLL) ".

In claim 8, line 3, delete " ("PLL") " and insert " (PLL) ".

In claim 12, lines 3-4, delete " ("carrier signals") " and insert " (carrier signals) ".

In claim 14, line 2, delete " ("PLL") " and insert " (PLL) ".

In claim 17, line 3, delete " ("LNB") " and insert " (LNB) ".

In claim 21, line 5, delete "said multimedia" and insert "said first group of multimedia".

In claim 25, line 2, delete " ("LNB") " and insert " (LNB) ".

In claim 27, line 2, delete " ("PLL") " and insert " (PLL) ".

In claim 30, lines 3 and 5, "system-level" and insert "a system-level".

In claim 30, line 5, delete "said multimedia" and insert "said first group of multimedia".

In claim 34, line 2, delete " ("LNB") " and insert " (LNB) ".

In claim 36, line 3, delete " ("PLL") " and insert " (PLL) ".

In claim 37, line 3, delete " ("PLL") " and insert " (PLL) ".

In claim 40, line 3, delete " ("NCO") " and insert " (NCO) ".

Claims 3,6,9-11,13,15,16,18-20,22-24,26,28,29,31-33,35,38 and 39 directly or indirectly depend on claim 1,12,21 or 30. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8,12-18,21-27 and 30-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sih et al. USP 6,608,858 B (Sih) in view of Kuo, USP 6,647,055 B2 (Kuo).

Regarding claims 1,21 and 30, Sih discloses a receiver system and a method for correcting, which provides drift compensation for signals (see Fig.7) comprising:

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a system-level drift calculation logic (700A, 700B, 710, note col.6, lines 15-21) to calculate drift amount for each of said multimedia signals in a first group of signals (IQ baseband samples); and a system-level drift correction logic (720, 730, 740) to correct drift of each of said first group of signals based on said average drift amount (output of 710, note col.6, lines 21-34).

However, Sih does not explicitly teach wherein the signals received are multimedia signals. Kuo teaches CDMA system receiver compensating for the Doppler frequency and further teaches wherein the received CDMA signals may incorporate multimedia signals (note col.1, lines 44-47). Therefore, it would have been obvious to one skilled in the art at the time of the invention to implement Sih's system capable of receiving multimedia signals in a CDMA environment for the purpose of transmitting and receiving multimedia applications demanded by the customers.

Regarding claim 12, Sih discloses a receiver system and a method for correcting, which provides drift compensation for signals (see Fig.7) comprising: a carrier analysis module to measure a signal characteristic of each of a plurality of signals (706A-706N); an averager module (700A, 700B, 710, note col.6, lines 15-21) to calculate drift amount for each of said multimedia signals in a first group of signals (IQ baseband samples); and a signal correction logic (720, 730, 740) to correct drift of each of said first group of signals based on said average drift amount (output of 710, note col.6, lines 21-34).

However, Sih does not explicitly teach wherein the signals received are multimedia signals. Kuo teaches CDMA system receiver compensating for the Doppler frequency and further teaches wherein the received CDMA signals may incorporate multimedia signals (note col.1, lines 44-47). Therefore, it would have been obvious to one skilled in the art at the time of the invention to implement Sih's system capable of receiving multimedia signals in a CDMA environment for the purpose of transmitting and receiving multimedia applications demanded by the customers.

Regarding claims 2,22 and 31, Sih in view of Kuo teach all subject matter claimed, as applied to claim 1,21 or 30. Sih further teaches a signal-level drift calculation logic (702A~702B, 704A ~ 704B) to calculate a difference (output of 702A~702B) in drift between each individual multimedia signal and said average drift amount; and a signal-level drift correction logic (702A~702B,704A ~ 704B) to correct drift for each of said individual multimedia signals based on said difference (note col.6, lines 35-47).

Regarding claims 3,13,15,16,23 and 32, Sih in view of Kuo teach all subject matter claimed, as applied to claim 1,12,21 or 30. Sih further teaches a carrier detection module (input to 500 in Fig.5,  $w(n)$ , which is also illustrated in Fig.6A as being part of Finger1~N in Fig.7, to measure a carrier frequency of each of said first group of multimedia signals (note col.3, lines 65-67); and an averager

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module (710) to calculate said average drift amount between each of said measured carrier frequencies and one or more desired carrier frequencies,  $\hat{w}(n)$  as output of 520 in Fig.5 comprised in each of the Finger1~N, associated with said multimedia signals.

Regarding claims 4,24 and 33, Sih in view of Kuo teach all subject matter claimed, as applied to claim 1,21 or 30. Sih further teaches additional system-level drift calculation logic (700N, 710) to calculate an average drift amount for a second group of multimedia signals (IQ baseband samples input to 706N); and system-level drift correction logic (720,730,740) to correct drift of each of said multimedia signals in said second group by said average drift amount (output of 710).

Regarding claims 5,17,25 and 34, Sih in view of Kuo teach all subject matter claimed, as applied to claim 4,12,24 or 33. Sih further teaches wherein said first and second group of signals are from first and second LNB (206,212 in Fig.2).

Regarding claims 6,18,26 and 35, Sih in view of Kuo teach all subject matter claimed, as applied to claim 1,12,21 or 30. Sih further teaches difference logic (500 in Fig.5 which is also illustrated in Fig.6A as being part of Finger1~N in Fig.7) to calculate the difference (note col.3, line 66) between a desired frequency value and an actual frequency value for each individual multimedia stream,  $\hat{w}(n)$  as output of 520 in Fig.5 comprised in each of the Finger1~N; and



an averager (710) to calculate the average difference between said desired frequency values and said actual frequency values,  $\hat{w}(n)$  as output of 520 in Fig.5 comprised in each of the Finger1~N.

Regarding claims 7,8,14,27,36 and 37, Sih in view of Kuo teach all subject matter claimed, as applied to claim 1,21 or 30. Sih further teaches a phase locked loop (720,730,740) to perform a system-level frequency adjustment based on said average drift amount (output of 710, note col.6, lines 21-34), said system-level adjustment affecting each of said multimedia signals in said first group.

5. Claims 9,10,19,20,28,29,38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sih et al. USP 6,608,858 B (Sih) in view of Kuo, USP 6,647,055 B2 (Kuo) and Hagberg et al. USP 6,049,255 (Hagberg).

Regarding claims 9,19,28,38 Sih in view of Kuo teach all subject matter claimed, as applied to claim 7. However, Sih in view of Kuo do not explicitly teach wherein said PLL is comprised of a divide-by-N module for precisely adjusting said system-level frequency responsive to said calculated average drift amount. Hagberg teaches a PLL circuit (Fig.1) comprised of divide by N module (106) for precisely adjusting. Therefore, it would have been obvious to one skilled in the art at the time of the invention to implement the teaching of Hagberg's PLL in Sih's system by connecting the output of VCO (840 in Fig.8) to the input of divide by N module (106 of Hagberg), thus adjusting said system-level frequency

responsive to said calculated average drift amount (810) for the purpose of improving the control of the VCO, as taught by Hagberg (note col.1, lines 25-30).

Regarding claim 10,20,29,and 39 Sih in view of Kuo and Hagberg teach all subject matter claimed, as applied to claim 9,19,28 or 38. Hagberg further teaches a sigma-delta A/D module (107) for removing jitter from an output of said divide by N module.

6. Claims 11 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sih et al. USP 6,608,858 B (Sih) in view of Kuo, USP 6,647,055 B2 (Kuo) and Crawford USP 6,633,616 B2.

Regarding claims 11 and 40, Sih in view of Kuo teach all subject matter claimed, as applied to claim 2 or 31. Sih as explained previously teaches said signal-level drift correction logic (702A~702B,704A~704B) to correct drift for each individual multimedia signal based on said difference (note col.6, lines 35-47), however, Sih in view of Kuo do not teach a numerically controlled oscillator (NCO).

Crawford teaches (see Fig.3) a NCO (316) coupled to a rotator (302) receiving a signal from a summer (318) to correct or minimize frequency or phase errors.

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Sih's teaching of having a loop filter coupled to a rotator with Crawford's teaching for the purpose of implementing parts readily available in the market, where Williams USP 6,140,822 (note col.9, lines 59-67) teaches that

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NCO has lower parts count due to higher level of integration in the IC, thus resulting in lower parts cost and lower power consumption.

### **Conclusion**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Williams USP 6,140,822 discloses the advantage of a PLL.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam K. Ahn  
6/22/05

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